

AD-A221 288



U.S. Army Research Institute
for the Behavioral and Social Sciences

DTIC FILE COPY

Research Report 1554

Attrition in Military Intelligence Interrogator Training: Identification of Possible Causes

David D. Burnstein and Julie A. Hopson
U.S. Army Research Institute

DTIC
ELECTE
MAY 02 1990
S B D

March 1990

Approved for public release; distribution is unlimited.

80 05 01 068

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES

**A Field Operating Agency Under the Jurisdiction
of the Deputy Chief of Staff for Personnel**

EDGAR M. JOHNSON
Technical Director

JON W. BLADES
COL, IN
Commanding

Technical review by

Beverly G. Knapp
Bob Webb, U.S. Army Intelligence Center and School

NOTICES

DISTRIBUTION: Primary distribution of this report has been made by ARI. Please address correspondence concerning distribution of reports to: U.S. Army Research Institute for the Behavioral and Social Sciences, ATTN: PERI-FOI, 5001 Eisenhower Ave., Alexandria, Virginia 22333-6600.

FINAL DISPOSITION: This report may be destroyed when it is no longer needed. Please do not return it to the U.S. Army Research Institute for the Behavioral and Social Sciences.

NOTE: The findings in this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION Unclassified			1b. RESTRICTIVE MARKINGS --		
2a. SECURITY CLASSIFICATION AUTHORITY --			3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution is unlimited.		
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE --			4. PERFORMING ORGANIZATION REPORT NUMBER(S) ARI Research Report 1554		
5. MONITORING ORGANIZATION REPORT NUMBER(S) --			6a. NAME OF PERFORMING ORGANIZATION ARI Field Unit at Fort Huachuca, AZ		
6b. OFFICE SYMBOL (If applicable) PERI-SA			7a. NAME OF MONITORING ORGANIZATION Same as 6a		
6c. ADDRESS (City, State, and ZIP Code) ATTN: PERI-SA Fort Huachuca, AZ 85613-7000			7b. ADDRESS (City, State, and ZIP Code) Same as 6c		
8a. NAME OF FUNDING/SPONSORING ORGANIZATION U.S. Army Research Institute for the Behavioral and Social Sciences			8b. OFFICE SYMBOL (If applicable) --		
8c. ADDRESS (City, State, and ZIP Code) 5001 Eisenhower Avenue Alexandria, VA 22333-5600			9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER --		
10. SOURCE OF FUNDING NUMBERS			11. TITLE (Include Security Classification) Attrition in Military Intelligence Interrogator Training: Identification of Possible Causes		
PROGRAM ELEMENT NO. 63007A			PROJECT NO. 793		
TASK NO. (148) 1306			WORK UNIT ACCESSION NO. H1		
12. PERSONAL AUTHOR(S) Burnstein, David D.; and Hopson, Julie A. (ARI Field Unit at Fort Huachuca)					
13a. TYPE OF REPORT Final		13b. TIME COVERED FROM 89/03 TO 89/04		14. DATE OF REPORT (Year, Month, Day) 1990, March	
15. PAGE COUNT					
16. SUPPLEMENTARY NOTATION --					
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB-GROUP	97E Native linguists, Attrition, Interrogators, Military intelligence		
19. ABSTRACT (Continue on reverse if necessary and identify by block number) Research was conducted to determine the factors that contributed to more than 20% attrition in the 97E10 interrogator course. It was found that native linguists were attriting at a higher than expected rate. Also, academic attrition stemmed primarily from four special subject matter areas. Researchers concluded that attrition of native linguists can be reduced by raising the cutoff scores used in initial screening or providing the native linguists with more individual assistance. Academic attrition can be reduced by improving the instructional technology in the problem subject matter areas. K...					
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION Unclassified		
22a. NAME OF RESPONSIBLE INDIVIDUAL David D. Burnstein			22b. TELEPHONE (Include Area Code) (602) 538-4704		22c. OFFICE SYMBOL PERI-SA

Research Report 1554

Attrition in Military Intelligence Interrogator Training: Identification of Possible Causes

David D. Burnstein and Julie A. Hopson
U.S. Army Research Institute

Field Unit at Fort Huachuca, Arizona
Julie A. Hopson, Chief

Systems Research Laboratory
Robin L. Keese, Director

U.S. Army Research Institute for the Behavioral and Social Sciences
5001 Eisenhower Avenue, Alexandria, Virginia 22333-5600

Office, Deputy Chief of Staff for Personnel
Department of the Army

March 1990

**THIS DOCUMENT CONTAINED
BLANK PAGES THAT HAVE
BEEN DELETED**

Army Project Number
2Q263007A793

**Human Factors in Training
and Operational Effectiveness**

Approved for public release; distribution is unlimited.

FOREWORD

The recent high attrition rate in the 97E10 interrogator course has caused concern within the U.S. Army Intelligence Center and School and the Training and Doctrine Command (TRADOC). The result is a renewed research effort to determine how the rate of attrition can be lowered to meet TRADOC standards. Part of this research is to identify reasons why students were attriting to determine if in-house remedies will decrease the attrition rate. At the request of TRADOC, the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) Field Unit at Fort Huachuca conducted an investigation to determine possible causes of the attrition. This report presents the results of the ARI effort.

The results of this study were briefed to the Deputy Commander of the U.S. Army Intelligence Center and School and the Director of the Department of Human Intelligence. The TRADOC Deputy Commanding General for Training was provided a report of the results.



EDGAR M. JOHNSON
Technical Director

Accession For	
NTIS GRA&I	<input checked="checked" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

ATTRITION IN MILITARY INTELLIGENCE INTERROGATOR TRAINING: IDENTIFICATION OF POSSIBLE CAUSES

EXECUTIVE SUMMARY

Requirement:

To determine factors that contribute to the high attrition rate in Military Intelligence Interrogator training and identify actions that the U.S. Army Intelligence Center and School can take to reduce attrition.

Procedure:

Records of graduating interrogators were compared to those attriting from the training to determine what factor(s) was more characteristic of the attrition group. The causes of academic attrition were analyzed to determine if a particular phase of training or subject matter area contributed to the high attrition.

Findings:

As a group, native linguists had a higher rate of attrition than would be expected from their population in the student body. Academic attrition tended to be correlated with specific subject matter areas within the training program.

Utilization of Findings:

These results can be used to revise the training technology used to instruct difficult subject matter and high attrition-prone students.

ATTRITION IN MILITARY INTELLIGENCE INTERROGATION TRAINING: IDENTIFICATION OF POSSIBLE CAUSES

CONTENTS

	Page
INTRODUCTION	1
METHOD	1
RESULTS AND DISCUSSIONS	2
CONCLUSIONS	10

LIST OF TABLES

Table 1. Breakout of the 97E student population for CY 87-89 by pass and academic and administrative attrition	2
2. Total attrition with and without administrative drops	3
3. Total academic attrition with and without native linguists	5
4. Probability of passing the 97E course	8
5. Blocks of training having high failure	9

LIST OF FIGURES

Figure 1. Effects of changing ST cutoff score for native linguists on predicting the number of valid rejects	4
2. Effects of changing ST cutoff score for non-native linguists on predicting the number of valid rejects	4
3. Recycle points for the two recycle groups, those who were recycled and passed the course and those who were recycled, but failed (CY 88-89)	6
4. Recycle and drop points for 97E students who attrited after being recycled (CY 87-89)	7

ATTRITION IN MILITARY INTELLIGENCE INTERROGATION TRAINING IDENTIFICATION OF POSSIBLE CAUSES

Introduction

In calendar years 1987 and 1988, the attrition rate in the 97E, Interrogation Course was over 20%. This high rate was unacceptable by TRADOC standards. ARI was requested by TRADOC to assist in determining when in the course of study recycles and failures occurred. An implied question was to determine what factors, personal and academic, might be contributing to the high attrition.

Method

The method consisted of an analysis of the student database from the Exploitation Division of the Department of Human Intelligence. The database covered 468 students from 48 classes conducted during CY 1987, 1988, and the first quarter of 1989. The database contained the following information: rank, company, language, where they learned the language, the component, a recycle code indicating where in the training they were recycled, a drop code, indicating where in the cycle they were dropped, whether they had graduated or failed, and a remark section which included if the drops were academic or administrative. Also in the database, for some of the students, were GT and ST scores.

Students were divided in to groups based on whether they had passed the training or attrited. They were further divided based on whether or not they had been recycled during the training, i.e., had to repeat the course. This resulted in four comparison groups of students:

- I - passed without recycle
- II - passed with recycle
- III - dropped without recycle
- IV - dropped with recycle

There was a fifth group, administrative drops whose data was analyzed independently of the other four groups. Table 1 shows a break^out of the students by groups for each of the CYs used.

The factors, GT and ST scores, component, source of language component and company were combined with the attrition data in order to determine if the four groups differed on any of the factors. In addition, data were analyzed to determine where in the training students were being recycled and dropped and if particular subjects or tasks were causing the students difficulty.

Table 1

Break Out of the 97E Student Population for CY 87-89 by Pass and Academic and Administrative Attrition

	ADMINISTRATIVE				
	PASSED		ATTRITE		ATTRITION
	W/O RECYCLE	W/RECYCLE	W/O RECYCLE	W/RECYCLE	
CY 89 (N=47)	60% (N=28)	28% (N=13)	2% (N=1)	11% (N=5)	0%
CY 88 (N=200)	45% (N=90)	31% (N=63)	7% (N=14)	11% (N=22)	6% (N=11)
CY 87 (N=221)	48% (N=105)	23% (N=50)	5% (N=11)	14% (N=32)	10% (N=23)

Permanent party from the Exploitation Division and the Department of Evaluation and Standardization provided anecdotal information about classroom problems. The reasons for administrative drops and academic drops without recycle were collected for FY 88-89. All these data were then combined to form a profile of attrition for the time frame under consideration.

Results and Discussions

Administrative Drops

As seen in Table 2, administrative drops accounted for 6% of the CY 88 and 10% of the CY 87 total attrition. Although administrative drops are typically uncontrollable, most administrative drops in the CY 87 were preventable. In CY 87, 14 National Guard/Army Reserve (61% of the admin drops) did not have time to recycle as they had to go back to their civilian activities. These students were classified as administrative drops, but were given the opportunity to return to complete the course during their next summer tour. In 1988, administrative drops resulted from a variety of reasons. These included medical reasons, student requests to be dropped, ETS (Expiration Term of Service), and no language training, to name a few. In the first two classes in CY 89, there have been no administrative drops.

Table 2

Total Attrition With and Without Administrative Drops

	TOTAL	ADM DROP	ATT W/O ADM DROP
CY 89	13% (6/47)	0	13% (6/47)
CY 88	25% (49/200)	6% (11/200)	20% (38/187)
CY 87	30% (66/221)	10% (23/221)	22% (43/198)

Native Linguists

When possible contributing factors to academic attrition were reviewed, only the source of language stood out. Native linguists (those with English as a second language) were attriting at a rate far greater than would be expected based on their proportion of the population. (Chi Square = 17.31, df = 1). This indicated that the native linguist being trained as an interrogator is a high risk population in need of special attention. As seen in Table 3, removing the native linguists data from the training population decreased the academic attrition.

Currently a cutoff score of 95 on the ST is used to screen interrogators. Raising the cutoff score to 105 on the ST would have eliminated the native linguist attrition. Figure 1 is the classical four cell distribution matrix for determining cutoff score. There are four categories of predictions:

- students predicted to pass, who pass
- students predicted to pass, who fail (false positive)
- students predicted to fail, who pass (false negatives)
- students predicted to fail, who fail (valid rejects)

As shown in Figure 1, increasing the ST cutoff score from 95 to 105 would have correctly identified 9 of the native linguists who would have failed, while only losing 2 who we would have predicted would pass. Furthermore, raising the ST cutoff to 105 would have only falsely screened out 2 non-native linguists while correctly identifying 1 failure (Figure 2).

	PASS	FAIL		PASS	FAIL
above cutoff	13	12		11	3
below cutoff	0	0		2	9
	ST = 95 (CURRENT CUTOFF)			ST = 105	

Figure 1. Effects of changing ST cutoff score for native linguists on predicting the number of valid rejects.

	PASS	FAIL		PASS	FAIL
above cutoff	161	33		159	32
below cutoff	0	0		2	1
	ST = 95 (CURRENT CUTOFF)			ST = 105	

Figure 2. Effects of changing ST cutoff score for non-native linguists on predicting the number of valid rejects.

Table 3

Total Academic Attrition With and Without Native Linguists

	TOTAL ACADEMIC	WITHOUT NATIVE LINGUISTS	NATIVE LINGUISTS
CY 89	13% (6/47)	7% (4/44)	67% (2/3)
CY 88	20% (38/187)	18% (28/160)	43% (10/27)
CY 87	22% (43/198)	20% (37/189)	67% (6/9)

The problem of native linguist attrition can be addressed in two different ways. One is to raise cutoff scores to screen out highly likely failures. If native interrogators are an acceptable option, for example because of the low cost for language training, changing the instructional strategy for this group is another possibility.

Recycles

Training is divided into sections called phases. The phases and the sequence they are taught, are shown on the horizontal axis in Figure 3, i.e., maps is the first phase, days is the last. A recycle is a student who academically fails a phase of the training and is put into another section of students. The recycle is given the opportunity to pass the phase of training previously failed, and continue on to complete the program. The recycles fall into two groups, those that pass, and those that fail later in the training and are dropped. The two groups of recycles, showed different patterns for where they were recycled.

Figure 3 shows that those students who will later be academic drops recycle much earlier in the course (recording and reporting) than do those recycles who will pass. Though not shown in the figure, anyone who drops maps, will not make it through the course. Figure 4 indicates that the recycles who fail, have a problem with the days phase. Combining all recycles indicates that there is only a 35% chance of passing if one is recycled at recording and reporting, while there is a 94% change of passing if the recycle occurs at days (Table 4).

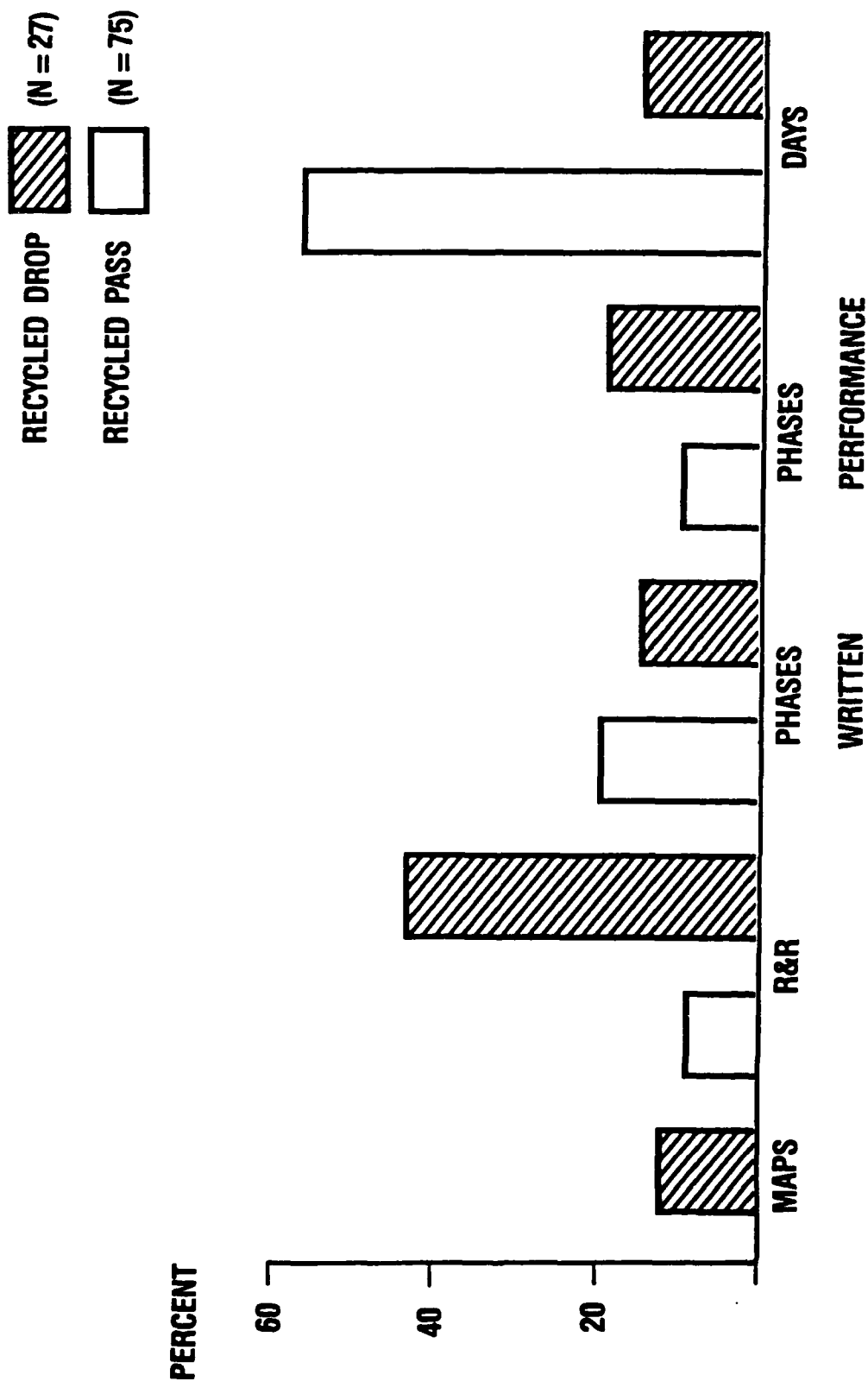


Figure 3. Recycle points for the two recycle groups, those who were recycled and passed the course and those who were recycled, but failed (CY 88-89).

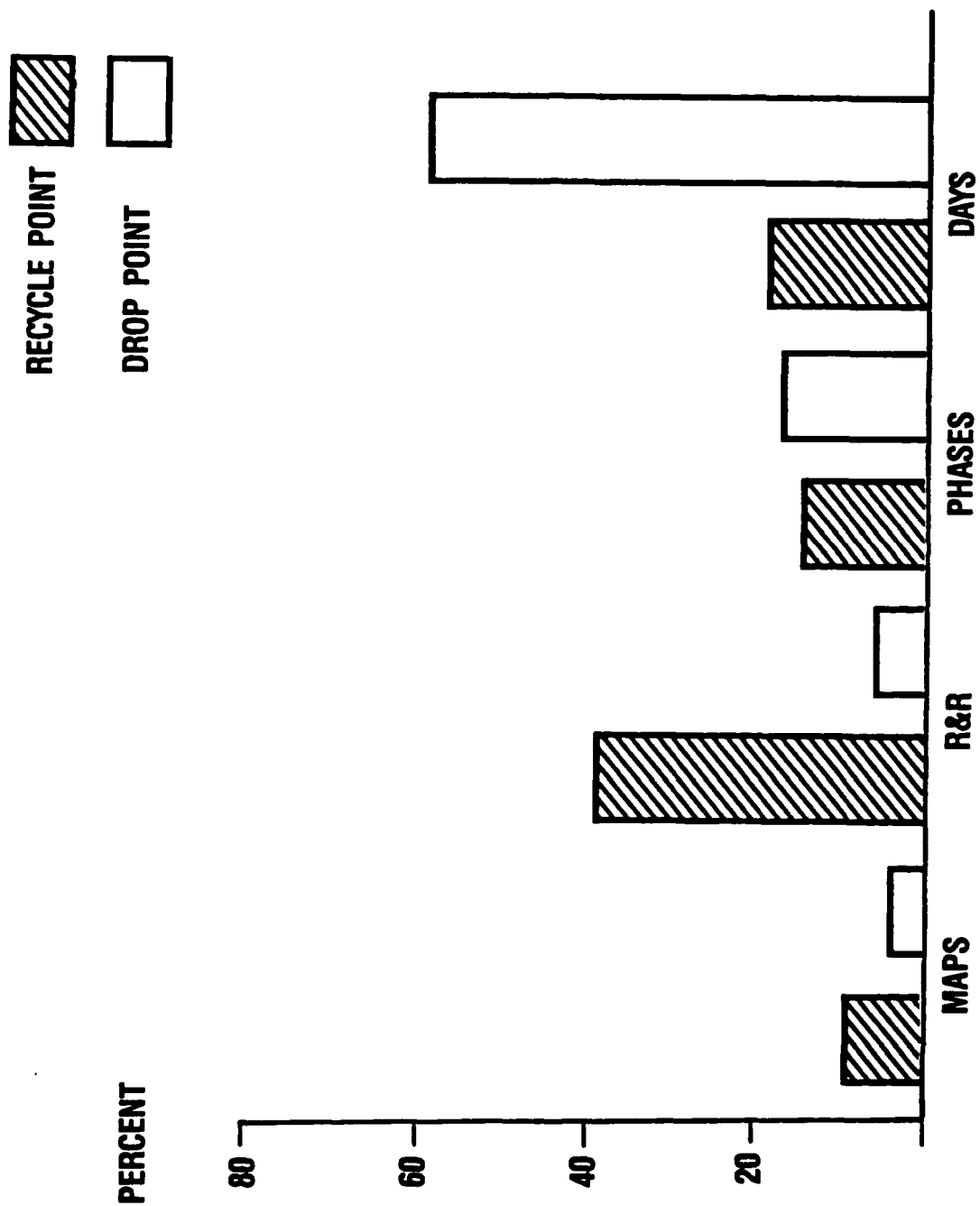


Figure 4. Recycle and drop points for 97E students who attrited after being recycled (CY 87-89).

Table 4

Probability of Passing the 97E Course

MAPS	0
R&R	.35
PHASES WRITTEN	.67
PHASES PERFORMANCE	.80
DAYS	.94

Drops Without Recycle

Drops without recycle make up a special population since all students have the opportunity to recycle. Six students were dropped because of the lack of ability to complete the academic requirements and 3 students asked to be dropped. The other 6 students dropped for a variety of reasons. For the most part this group is "motivational drops." An academic resolution would probably contribute little to resolving this type attrition. Better screening for students who "don't want to be here," appears a way to approach the drop without recycle problem. Currently, ARI is conducting another effort to investigate improved screening methods.

Subject Matter Difficulties

The phases of the training consist of blocks of subject matter, for example, the performance phase includes the approach, the questioning, map tracking, etc. The students are tested on the blocks, and the failure on a block causes the student to be recycled. The database lists the phase in which the student was dropped or recycled and the block(s) that were failed. Within the various phases only certain topics cause difficulty. These are listed in Table 5. Out of 124 failures, 77 (62%) were accounted for by the blocks in Table 5. This indicates that student failures within the training phases were quite specific rather than general, and were addressable by the Exploitation Division. In fact, historically instructors had worked with individual students having problems. They analyzed particular problems the student had and devised special training to address the problem. However, this practice was neither wide-spread nor institutionalized within the division due to the heavy instructor teaching load.

Table 5

Blocks of Training Having High Failure

PHASE	BLOCK
R&R	FORMAT
PHASES WRITTEN	SOVIET ORDER OF BATTLE
PHASES PERFORMANCE	MAP TRACKING
DAYS	INFORMATION OBTAINED

Conclusions

In order to reduce the attrition of native linguists, better screening could be done if the ST cutoff score is raised to 105. However, if a population of native linguists interrogators is required, USAICS must treat them as a special high risk population. Special instructional techniques will have to be implemented to address the population.

Attrition, for the most part was the result of failure on four blocks of study within the training program. Remedial action within the Center and School, such as review and improvement of the instruction for those blocks, would contribute to reducing attrition to a TRADOC acceptable level. In addition, a policy of the division conducting periodic systematic error analyses to determine the types of errors the students were committing and the cause of the errors, would serve as a preventive measure for future academic attrition.